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10/799,796	03/12/2004	Hiroshi Suzushima	17534	1862

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EXAMINER

LEUBECKER, JOHN P

ART UNIT PAPER NUMBER

3739

DATE MAILED: 09/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

NI

<b>Office Action Summary</b>	<b>Application No.</b>		<b>Applicant(s)</b>	
	10/799,796		SUZUSHIMA, HIROSHI	
	<b>Examiner</b>		<b>Art Unit</b>	
	John P. Leubecker		3739	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 March 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☒ Claim(s) 15 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>3/12/04 &amp; 5/18/04</u> .   | 6) <input type="checkbox"/> Other: _____                                    |

***Claim Objections***

1. Claims 1 and 3 are objected to because of the following informalities: as to claim 1, line 14, "peripheral-circuit part" should be ~~peripheral-circuit parts~~—(plural) to be consistent with the previously claimed term; in claim 3, line 3, "filed" should be ~~field~~--. Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:  
  
The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
3. Claims 3 and 12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As to claim 3, term "the surface" lacks antecedent basis.

As to claim 12, term "the top surface" lacks antecedent basis.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-4, 10 and 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gilad et al. (US 2006/0004256) in view of Wagner et al. (US 2002/0185588).

Referring to claim 1, Gilad et al. disclose a capsule including an observation optical unit having an image pick-up element (107) and an optical lens (104) that forms an objective optical system; an illuminating unit having an illuminating substrate (112), an electroluminescent light source (110, LEDs or any other suitable light source, [0006]) and a light-emitting control circuit ([0032]); peripheral circuit parts ([0031,0032]) which form various circuits including a signal processing circuit, a receiving and transmitting circuit, and a control circuit; and a power source unit (118) which supplies power to the observation optical unit, the illuminating unit, and the peripheral-circuit part. Gilad et al. generically mention LEDs (e.g., electroluminescent light sources) and fails to any particular type. However, as is recognized in the art, LEDs (as well as laser diodes) are of two basis types: edge emitting and surface emitting. Although it could be argued that non-specificity of either type, and only a reference to the genus, might be considered an inherent incorporation of both types of light sources, Wagner et al. is cited as one of many references teaching that surface emitting light emitting devices “have significant manufacturing and packaging advantages over conventional edge emitting devices” ([0005]). Therefore, if not inherently incorporated, it would have been obvious to one of ordinary skill in the art at the time of the invention to have used a surface emitting type of light device for the reasons taught by Wagner et al. One of ordinary skill in the art of light sources would also recognize the cost advantages, light efficiency advantages, and power consumption advantages of surface emitting devices over edge emitting devices that are touched upon in paragraphs [0006] to [0008] of Wagner et al. and reverberated throughout the prior art.

As to claim 2, taking the optical elements (108) as being part of the light source, these elements are arranged around the observation optical unit (Fig.1A). Alternatively, note Figure 5A. As to claim 3, taking “the surface of the capsule portion” to be the illuminating substrate (which is comprised by the capsule portion as per claim 1), then in either Figure 1A or Figure 5A, the light sources are on the surface and outside of the field of view. As to claim 10, the light source is divided (Fig.1A, Fig.5A). As to claim 12, note optical member (108) in Figure 1A and the dome shaped element referred to as (110) in Figure 5A. As to claim 13, the Examiner takes the position that inherently small size of the device, and thus the small size of the PCB (112) would inherently include a small amount of flexibility (depending on the force applied). As to claim 14, note that optical elements (108, Fig.1A) change the illuminating direction of the light sources.

6. Claims 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gilad et al. in view of Wagner et al. and further in view of Chi-Ming (US 2003/0205707) and Kim et al (US 2003/0234607).

As to claims 5-7, one of these claims is inherently anticipated by Gilad et al. since the light source (110), which could be an LED, has to be made of a material that is either organic or inorganic. Furthermore, if it is organic, it would have to contain either a high or low molecular weight material. However, since it probably doesn't matter, Gilad et al. fails to specify the material used to make up the light source. Chi-Ming is just one prior art reference evidencing that both organic and inorganic light sources are known in the art (note [0002]). Kim et al. is just one prior art reference evidencing that organic light sources are made either from a high

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molecular weight material or a low molecular weight material ([0005]). It would be obvious to one of ordinary skill in the art at the time of the invention, at the suggestion by Gilad et al. to use an electroluminescent light source (e.g., LED), to use any electroluminescent light source known in the art, including inorganic and organic, whether using a low molecular weight material or a high one. The particular material used or use of such material in a light source is not the inventive concept.

7. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gilad et al. in view of Wagner et al. and further in view of Kobayashi (US 2003/0189742).

Gilad et al. suggests LEDs “or other suitable sources” but fails to specifically mention others. It is well documented that a laser diode is a suitable alternative to a light emitting diode. Kobayashi is just one of many references that teaches that a laser diode and a light emitting diode can be used for the same purpose, i.e., providing illumination light ([0042]). It would have been obvious to one of ordinary skill in the art at the time of the invention, and at the suggestion of Gilad et al., to use any known suitable source of light, including laser diodes.

8. Claims 9 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gilad et al. in view of Wagner et al. and further in view of Barbato et al. (US 2003/0130562).

Gilad et al. mention use of multiple LEDs but fail to disclose how many and what color. Although the Examiner takes the position that anyone with even slight skill in the medical imaging art would recognize that 3-color (RGB) LED illumination is commonly used to provide white illumination light or sequential color illumination for imaging purposes, Barbato et al. is

cited ([0016]) to evidence that this would be considered as one alternative light source arrangement, depending on the type of imaging system. It would have been obvious to one of ordinary skill in the art to have provided a red, green and blue illumination to accommodate the most common types of imaging in this art.

9. Claims 1-4, 7 and 9-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mullick et al. (US 2003/0167000) in view of Wagner et al.

Mullick et al. disclose a capsule including an observation optical unit having an image pick-up element (48) and an optical lens (44) that forms an objective optical system, an illuminating unit (46) having a light source (46); peripheral-circuit parts which form various circuits including a signal processing circuit ([0059]), a receiving and transmitting circuit (transceiver 18, Fig.1), and a control circuit (inherent circuitry between all controlling the image pick-up element, turning on the device and sending signals between the above mentioned elements); and a power source unit (54) which supplies power to the observation optical unit, the illuminating unit, and the peripheral-circuit part. The light source (46) can include a 3-diode matrix (e.g., RGB), inorganic LEDS or full color organic electroluminescent sources ([0060]), all of which would inherently require a substrate and control circuitry (the control circuitry being nothing more than circuitry connecting and switching power to the light source from the power source). Mullick et al. generically mention LEDs (and other electroluminescent light sources) and fails to any particular type. However, as is recognized in the art, LEDs (as well as laser diodes and certain other electroluminescent light sources) are of two basis types: edge emitting and surface emitting. Although it could be argued that non-specificity of either type, and only a

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reference to the genus, might be considered an inherent incorporation of both types of light sources, Wagner et al. is cited as one of many references teaching that surface emitting light emitting devices “have significant manufacturing and packaging advantages over conventional edge emitting devices” ([0005]). Therefore, if not inherently incorporated, it would have been obvious to one of ordinary skill in the art at the time of the invention to have used a surface emitting type of light device for the reasons taught by Wagner et al. One of ordinary skill in the art of light sources would also recognize the cost advantages, light efficiency advantages, and power consumption advantages of surface emitting devices over edge emitting devices that are touched upon in paragraphs [0006] to [0008] of Wagner et al. and reverberated throughout the prior art.

As to the other claims, note that the light source (46) is a toroidal ring (Fig.2, 3B) surrounding the observation unit and arranged along inner surface of the capsule portion out of the field of view of the optical system. The transparent window (62) would provide for a light condensing or diffusion member on a surface of the light source (46, Fig.3B). Furthermore, most light emitting devices (e.g. LEDs) are at least encapsulated in a transparent protective layer which would also meet this optical member. The size and shape of any substrate accommodating the light sources would inherently have a small amount of flexibility. The ring shaped semi-parabolic mirror ([0060]) would provide from an illuminating direction changing means.

10. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mullick et al. in view of Wagner et al. and further in view of Kim et al.



Mullick et al. fail to disclose the material used in the organic electroluminescent sources. Although one could say that the material used must at least fall within one of “low” or “high” molecular weight, Kim et al. is just one prior art reference evidencing that organic light sources are made either from a high molecular weight material or a low molecular weight material ([0005]). It would be obvious to one of ordinary skill in the art at the time of the invention, at the suggestion by Mullick et al. to use an electroluminescent light source, to use any electroluminescent light source known in the art, including ones falling within the two known categories: low molecular weight material or high molecular weight. The particular material used or use of such material in a light source is not the inventive concept.

11. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mullick et al. in view of Wagner et al. and further in view of Kobayashi ('742).

Mullick et al. fails to mention all specific light sources that would fall within “organic electroluminescent light sources”. It is well documented that a laser diode is a suitable alternative to a light emitting diode and falls within the category of “organic electroluminescent light source” (depending on the material from which it is made). Kobayashi is just one of many references that teaches that a laser diode and a light emitting diode can be used for the same purpose, i.e., providing illumination light ([0042]). It would have been obvious to one of ordinary skill in the art at the time of the invention, and at the suggestion of Gilad et al., to use any known suitable source of light, including laser diodes.

***Allowable Subject Matter***

12. Claim 15 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Jin et al. (US 2003/0072538), Jewell et al. (U.S. Pat. 6,920,165) and Takemoto et al. (U.S. Pat. 4,233,615)—note advantages of surface emitting light sources over edge-emitting ([0050] in Jin et al.; col.1, line 56+ in Jewell et al.; and col. 1, lines 5-45 in Takemoto et al.).

Segawa et al. (US 2004/0027459), Glukhovsky (US 2006/0036131), Avni (US 2004/0171914), Barbato et al. (US 2003/0130562), Gazdzinski (US 2002/0103417)—note capsule device having certain features similar to those disclosed and claimed.

Morikawa (U.S. Pat. 3,775,631)—note electroluminescent device.

Sheldon (U.S. Pat. 3,417,745)—note use of an surface emitting electroluminescent light source (40a, Figs.2d and 2e) on endoscope housing.

Inglese (U.S. Pat. 5,363,135)—note light source in endoscope.

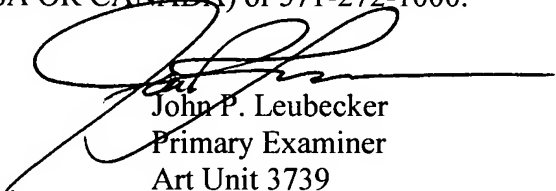
Lys et al. (U.S. Pat. 2005/0151489)—note paragraph [0022].

Miyamae et al. (US 2002/0093743)—note [0055].

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John P. Leubecker whose telephone number is (571) 272-4769. The examiner can normally be reached on Monday through Friday, 6:00 AM to 2:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Linda C.M. Dvorak can be reached on (571) 272-4764. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



John P. Leubecker  
Primary Examiner  
Art Unit 3739

jpl